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SUBSTITUTES

FOR

OPIUM IN CHRONIC DISEASES.

BY

J. F. A. ADAMS, M.D.,

PITTSFIELD, MASS.



REPRINTED FROM THE
TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS,
SEPTEMBER, 1889.

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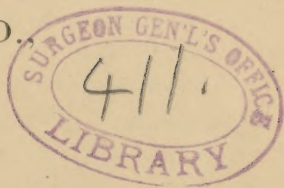
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SUBSTITUTES FOR OPIUM IN CHRONIC DISEASES.

By J. F. A. ADAMS, M.D.,
OF PITTSFIELD, MASS.

OPIUM is the most conspicuous article in the Pharmacopœia. Its extraordinary efficacy in relieving pain, the versatility of its powers, and its reliability in emergencies, give it a preëminent standing. It is generally recognized by the medical profession as the most indispensable of drugs. But, while surpassing other remedies in its beneficent effects, it is alike remarkable in its power for harm. Hence, its medical use requires a degree of caution not less than that with which the surgeon handles the scalpel. When to administer and when to withhold it, constitute one of the gravest of medical problems. There are times when the dangers and disadvantages of this most brilliant of drugs seem wholly out of proportion to its benefits. A growing dissatisfaction with opium is the motive of the present paper, which is designed as an argument in favor of restricting the use of opiates to a greater degree than has hitherto been the prevailing custom.

The disadvantages of opium are these:

1st. In an overdose it is an active poison.

2d. In ordinary doses its benefits are largely offset by various functional derangements.

3d. Its use involves the danger of the opium-habit.

1. *Opium in an overdose is an active poison.* This, which at first sight appears the greatest of its disadvantages, is, in fact, the least; for the very imminence of the danger compels caution, and the dose can be so regulated as to reduce this danger to insignificant proportions. Hence, in careful hands, fatal accidents from opium are almost unknown.

2. *In ordinary doses the benefits of opium are largely offset by various functional derangements.* This constitutes an objection to

opium far greater than the preceding; for the secondary effects of this drug are almost always prejudicial. These effects include digestive disorders, constipation, impairment of the hepatic function, headache, depression, and various nervous disturbances. Oftentimes these effects tend to keep up the very condition of the system which necessitated its use—for instance, in gout, rheumatism, and lithæmic neuralgia.

3. *The use of opium involves the danger of the opium-habit.* That this habit is widespread there can be no doubt; for there are probably few physicians who are not cognizant of some such cases, and there are certainly many others which never come definitely to our knowledge. It is obviously impossible to get accurate statistics concerning a habit which is, for the most part, jealously concealed. The public prints are somewhat given to extravagant statements in this direction; but the estimate which places the number of opium-takers in the United States, exclusive of the smokers, at 150,000¹ does not appear exaggerated. In proportion to the number of alcohol inebriates, this number appears insignificant; and yet it represents a vast amount of misery, for the slaves of opium are, in some respects, more wretched than those of alcohol. The worst feature of the opium-habit is, that its paralyzing influence upon the will renders it almost incurable. To renounce the habit is next to impossible without the aids which are offered by an institution. Even then relapses are the rule. A lady, whose case has come under my observation, has twice been “cured,” as was supposed, in two different institutions, remaining three months in each. The first time she remained “cured” for just two weeks, and the second time she went direct from the institution to a drug-store to purchase morphia. The efforts of the excellent men who are lavishing their skill upon these unfortunate cases deserve to be better rewarded. That permanent cures are occasionally effected I know from personal observation, and yet the rarity of such cases is evidenced by the words of Dr. B. W. Richardson,² who says, as the result of a large experience: “I have never yet known an instance in which I could be quite sure that the fully confirmed habit has been absolutely or permanently abandoned. I may have heard of such, I have seen none.”

¹ I. A. Loveland, M.D.: Quarterly Review of Narcotic Inebriety, Oct. 1888.

² Practical Notes on the Morphine-habit. Asclepiad, 1888, vol. v., No. 20.

It has been charged¹ that the medical profession is largely responsible for the prevalence of the opium-habit. That some cases do result from opiate prescriptions cannot be denied; but it is my belief that, in the practice of educated and respectable medical men, such occurrences are very rare. Physicians are incessantly warning their patients against the dangers of opium, and, as a rule, administer this drug with the utmost caution. The prime cause of the opium-habit is undoubtedly to be found in the unrestricted sale of opiates, and in the multitude of proprietary nostrums containing opium. Among the latter are included nearly all of the alleged "cures for the opium-habit."² It is true that the drug is usually taken in the first instance for the relief of pain; but this is constantly done without a physician's advice. When ordered by a medical man the dose is so regulated as to counteract the pain, and no more; but when taken ignorantly the dose is likely to be so large as not only to relieve the pain, but also to allow an excess which may cause intoxication. In those cases of inebriety attributable to physicians' prescriptions, the fault usually consists in the unlimited renewal of the prescriptions—a great abuse which needs legal restriction.³ If physicians, instead of writing prescriptions for opiates, would dispense all such remedies themselves, much good would result.

No doubt opiates are sometimes administered unnecessarily, for it is in the nature of things that this should occur. The pleadings of an impatient sufferer must at times influence a sympathetic physician to give opiates against his better judgment. Our people are, to a great

¹ J. B. Mattison, M.D.: The Responsibility of the Profession in the Production of Opium Inebriety. Medical and Surgical Reporter, Philadelphia, Feb. 9, 1878.

Ibid.: The Genesis of Opium Addiction. Detroit Lancet, 1884, vol. vii. p. 303.

I. A. Loveland, M.D.: The Morphine-habit. Quarterly Review of Narcotic Inebriety, July, 1888.

Ibid.: The Abuse of Opium. Same Journal, June, 1889.

How the Opium-habit is Acquired. Ed. Journal of Amer. Med. Association, Sept. 22, 1888, referring to Virgil D. Eaton, in Popular Science Monthly.

F. E. Oliver, M.D.: The Use and Abuse of Opium. Third Annual Report Massachusetts State Board of Health, 1872.

² B. F. Davenport, M.D.: Seventh Annual Report of State Board of Health, Lunacy, and Charity of Massachusetts, 1886, p. 190.

³ Loveland: The Refilling of Prescriptions. Quarterly Review of Narcotic Inebriety, April, 1889.

J. C. Wilson, M.D.: The Causes and Prevention of the Opium-habit and Kindred Affections. Boston Medical and Surgical Journal, Nov. 22, 1888.

extent, both self-indulgent and neurotic. They refuse to bear pain, and are apt to prefer the doctor who gives the quickest relief. It is pleasanter to give a hypodermic injection than to refuse it to a suffering and unreasonable patient. These influences cannot be ignored, for even doctors are human at times.

In acute cases the use of opium is comparatively safe; for in such the number of doses is usually not large, and the patient is wholly under the physician's control. In the last stage of incurable diseases the objections to its use are still less. But in chronic cases opium needs to be used with the greatest caution, for here the unfavorable effects upon the system are the most marked, and the formation of the opium-habit in such cases is particularly to be feared. The reason for the latter is that the necessity is of longer continuance, and, the patient being under less constant supervision, is liable to continue taking the opiate without the physician's knowledge. It is necessary, therefore, in such cases to abstain from the use of opiates whenever possible. This necessity is generally recognized by the profession, but opinions must naturally differ as to what circumstances imperatively demand their use.

The usual reason for giving opium is the belief that no other remedy is capable of accomplishing the result desired. Opium has hitherto been almost the only reliable analgesic; but recent discoveries in therapeutics have done much to lessen our dependence upon it, since they have placed within our reach several safer remedies which are capable of being used as substitutes. The avidity with which the new analgesics are seized upon by the medical profession and their powers tested is an indication of the deep-seated antipathy to opium, and the desire to be emancipated from its rule.

The family physician has ample opportunity to observe the necessity for seeking out such substitutes. Feeling the responsibility, not only for the present but also for the permanent well-being of his patients, and deeply interested in the future of the rising generation, he shrinks from giving present relief at the cost of ultimate harm. He must almost inevitably hold the secrets of opium-takers—few or many—and, seeing the cloud which overshadows them and their offspring, must grow more and more determined that the future of other families shall not, if in his power to prevent it, become so darkened.

The strength of the revolt against opium is shown in these words

of Dujardin-Beaumetz:¹ "The older I grow, the more chary I become in the use of morphine, for, despite the marvellous powers of this alkaloid, which is by far the most active of analgesics, its dangers and disadvantages are such that I reserve its employment for exceptional cases only."

We will now pass to a brief consideration of some of the remedies which can properly be regarded as substitutes for opium in chronic diseases.

FOR THE RELIEF OF PAIN.

The discovery of the analgesic powers of the antipyretics is a notable event in therapeutics. Making due allowance for the enthusiasm which their novelty has excited, the fact is definitely established that these remedies are valuable additions to the Pharmacopœia. It was not to be expected that they should be free from drawbacks, and naturally each has its defects and limitations. The two oldest of the group, antipyrin and acetanilid, have already been sufficiently tested to have their sphere of action pretty clearly circumscribed. Phenacetine is growing in favor; while exalgine has already made an excellent impression. These remedies have well-grounded claims to be regarded as rivals to opium. Their power for relieving pain is extraordinary, in many cases equal and occasionally superior to opium. They appear, as a rule, however, less prompt and less certain, especially when pain is very violent. As an offset to this inferiority, they have the advantage over opium of being less dangerous, causing less derangement of the system and not leading to any enslaving habit. Their effectiveness in migraine where opium is given, if at all, only as a last resort, and in the milder forms of neuralgia, is very striking. But the essential question which now concerns us is, whether they can be depended upon in severe forms of pain in which opium would otherwise be a necessity. That they do fulfil this indication much evidence is already on record.

Antipyrine—the oldest of this group, besides its antipyretic, antispasmodic, antidiabetic, and other powers, has proved itself a most valuable analgesic. Among the many writers who have borne witness to its efficacy in this direction, several have distinctly described it as

¹ New Medications. Translated by E. P. Hurd, M.D. The Physician's Leisure Library. P. 268. George S. Davis, Detroit, publisher.

a substitute for opiates. The following statements of this nature are referred to in Dr. Griffith's article on "General Therapeutics," in the *Annual of the Universal Medical Sciences* for 1889.¹ Fiske² reported that one patient, who had used morphia for headache, obtained in antipyrine a satisfactory substitute. Milne³ adds his testimony to its value in allaying pain and producing sleep, and it has with him almost entirely supplanted opium for these purposes. Wolf⁴ recommends it in painful conditions in which it is desired to avoid morphia. Bahnson⁵ has used it with success in relieving pain, even in cases where opium had failed. Norton⁶ found the relief of pain by it in dysmenorrhœa greater than that afforded by opium and belladonna suppositories.

As to the objections to antipyrine, the principal one is its depressing effect upon the heart when given in large doses. It is therefore contraindicated where the circulation is feeble; and the dose needs to be always cautiously regulated. Its use is also attended at times with other unpleasant symptoms, as cutaneous eruption, gastric disturbance, coryza, etc., which are to be regarded as inconveniences rather than dangers.

My own experience with antipyrine has given me a high opinion of its analgesic powers. Having ordinarily used it in five- or ten-grain doses for an adult, symptoms of depression have been very rare and never alarming; and the other unpleasant effects have been practically absent. Yet even in these moderate doses the effect in relieving pain has been very satisfactory. The cases of a chronic nature, aside from headache, in which it has proved itself efficient have been chiefly neuralgia and rheumatism. The relief has been complete in some cases, and incomplete in others; but the cases in which the remedy has entirely failed have been a very small proportion. Among the many cases of success with antipyrine, in my own practice, the three

¹ In this article by Dr. J. P. Crozer Griffith, of Philadelphia; and also in the article with the same title in the same publication for 1888, by Drs. Pepper and Griffith, are found digests of the several reports upon this and the other new medications rendered during the two years ending January 1, 1889. For later reports see the *Therapeutic Gazette* for the present year.

² Boston Medical and Surgical Journal, July 12, 1888.

³ Weekly Medical Review, February 4, 1888.

⁴ Therapeutische Monatshefte, June, 1888.

⁵ North Carolina Medical Journal, July, 1888.

⁶ Medical and Surgical Reporter, February 25, 1888.

following are selected because in two of them it was substituted for morphia and proved equally efficacious in relieving pain, and also because it was used for such long periods that there seems to be no room for error. The first is a case of intercostal neuralgia, the second is one of protracted pain from the pressure of a morbid growth upon the brachial plexus, and the third a case of facial neuralgia in which the effect was admirable, notwithstanding a weak heart.

CASE I.—Miss B., aged forty; a neurotic invalid for many years; had been subject for five years, or more, to frequent attacks of intense intercostal neuralgia of left chest. For this she had been accustomed to resort to morphia, which alone would give relief. On March 26, 1888, I saw her in one of these attacks and ordered antipyrine, five grains every four hours. She was, as she expressed it, "wonderfully relieved;" the effect being more prompt and decided than that of morphia. Subsequently, whenever she felt any return of the pain, she would take a few doses of antipyrine and the attack would be aborted. The only severe attack which has since occurred accompanied an attack of acute indigestion in the following May. This also was relieved by antipyrine. The correction of a slight uterine displacement in August was followed by a general improvement of the health, and the neuralgia has not returned since that time. She has taken no morphia since the antipyrine was first prescribed.

CASE II.—Mrs. D., aged seventy-four. Twenty-two years ago this patient suffered an amputation of the left breast for supposed malignant disease. In August, 1886, she began to suffer from pain and numbness of the left hand and forearm, which were at times accompanied with swelling. Pressure upon the nerves was suspected, but nothing could be found in the axilla until more than a year later, when a hard mass was detected high up in the axilla, firmly adherent to the neck of the scapula in front. This has since grown upward, until now a growth of extreme hardness has made its appearance, both above and below the clavicle. For nearly three years this lady was a constant sufferer. Massage and galvanism aggravated the pain, and blisters gave only temporary relief. At the end of a year she had become so worn out with pain that she began to take morphia, one-eighth to one-quarter grain at bedtime. This produced sleep, but caused so much nausea and depression the following day that she took it as rarely as possible.

On January 23, 1888, I began giving her antipyrine in five-grain capsules, three times a day. This gave great relief during the day, but it was still necessary to take morphia at night. The pain now involved the whole arm and shoulder and the suprascapular region. On March 5th, there was numbness of the thumb, index and middle fingers. On March 24th, there was complete anæsthesia of the ulnar side of forearm and hand, with hyperæsthesia of the radial side. Soon after this, all tactile sensation was lost in the hand and forearm, but the deep-seated pain continued. So much dis-

turbance followed the use of morphia that the antipyrine was increased to ten grains, three times a day. With this amount she became so comfortable that the morphia was only occasionally resorted to. She experienced no unpleasant effects from the antipyrine and was very happy to escape the nausea, constipation, and general depression which always followed the use of morphia. She tried several times to discontinue the antipyrine, but found it indispensable; as the pain never ceased unless it was taken. On the 8th of last June the antipyrine had ceased to have any effect, and the pain had become most excruciating. I then began giving her hypodermic injections of morphia, one-half grain at bedtime and one-quarter grain after breakfast. This was continued until June 20th; after which, the pain being less severe, the night injection alone was given, and that in diminishing dose, until June 28th, when the pain ceased entirely and has not since returned. The arm is now completely paralyzed, and without sensation. The nerves are apparently so tightly compressed as to have finally stopped the pain.

The interesting feature of this case consists in the fact that for over sixteen months this patient was kept comparatively comfortable by antipyrine, and was obliged to take but little morphia, which latter drug was avoided, not from fear of the opium-habit, but on account of its disagreeable after-effects.

CASE III.—Mrs. S., aged forty-eight. This lady has an immense uterine fibroid. She had acute rheumatism five years ago, which has left her with a mitral regurgitation. Has been greatly depleted by menorrhagia for many years. In good flesh, but feeble and suffering much from faintness and other heart symptoms. I was called to see her October 31, 1888, on account of a severe attack of facial neuralgia. Antipyrine was given in five-grain capsules, three times a day, from which she obtained prompt relief. She felt no faintness nor increased weakness. Digitalis, which she had previously been taking, was continued at the same time.

This case is mentioned, because it was one in which large doses of antipyrine were contraindicated: and the propriety of giving it at all might be questionable: but the small amount given gave complete relief without any depression.

Acetanilide has already proved itself an analgesic of great value. By Dujardin-Beaumetz¹ it is even placed before antipyrine in this respect: but most other writers give it the second place. It possesses the advantage over antipyrine of being far less depressing and causing no eruption. Its fault is, that in large doses it produces cyanosis: but

¹ De l'Acetanilide (Antifebrin) comme Médicament Sédatif au Système nerveux. Bull. gén. de thérap., 1887, vol. 113, p. 97. Transl. Therap. Gazette, 1887, 3 s., iii, p. 577.

this appears to be less of a danger than a warning against excessive doses. The doses used by myself have usually been five and ten grains; from these neither cyanosis nor any other unpleasant effect has ever resulted. The effect upon pain has generally been less than that following similar doses of antipyrine; and it has latterly seemed best to give seven or eight grains as a minimum dose, instead of five. The chronic cases in which it has shown itself capable of replacing opiates have been rheumatism, especially in the form of lumbago and dysmenorrhœa. In several cases of lumbago its administration was followed by relief as prompt and complete as would have resulted from hypodermic injection of morphia. In dysmenorrhœa, I have given it to several young ladies, whose sufferings had previously been so severe as to require the use of morphia. In all of these, the relief following the use of acetanilide in one or two doses of five or ten grains, has been so prompt and complete as to surprise and delight the patients. Larger doses than these have been given by others with entire safety and a larger degree of success than has attended my own experiments with the minimum dose. Dr. Austin Flint,¹ for example, reports an obstinate case of sciatica not only relieved, but actually cured, in forty-eight hours by doses of forty to fifty grains.

Phenacetine. This remedy, of more recent discovery than antipyrine and acetanilide, has been found by numerous observers to resemble them strongly in its analgesic powers. It appears to be safer than either of these remedies, since it produces neither depression nor cyanosis, unless used in excessive doses. For these reasons it promises to be a valuable addition to the pain-relieving medicaments. My own experiments with this drug have tended to confirm the views of others; but do not yet justify any decided expression of opinion as to its value as a substitute for opium.

Salicylic acid, and more especially its sodium salt, should be included in this list, on account of their favorable action in relieving the pain of chronic rheumatism. Though their effects are less certain and less brilliant in the chronic than in the acute form of this disease, yet they are of marked value in a large proportion of cases. The relief to pain is obtained through their curative influence on the disease—a marked

¹ A Case of Sciatica Treated with Large Doses of Antifebrin. New York Medical Record, Dec. 1, 1888.

contrast to the action of opium—which, though more efficient in relieving the pain, acts otherwise most unfavorably.

Other analgesics of great value are quinine, in neuralgia, especially the malarial variety; cocaine, used hypodermically; galvanism and massage. To these may be added all of those hygienic measures which, by imparting vigor to the system, tend to remove the causes of pain.

TO INDUCE SLEEP.

The dangers of opium, when used as a hypnotic, are even greater than as an analgesic; for pain, which is to some extent an antidote to opium, protects the system in part from its toxic influence. In simple insomnia, though often resorted to by the laity, it is rarely used by physicians, but is reserved for those extreme cases where other remedies fail. Until recently, the only drug equalling opium in hypnotic power has been chloral hydrate; but this remedy possesses disadvantages scarcely less than those of opium itself. When, therefore, the milder hypnotics prove ineffectual, we naturally desire some safer remedy than either opium or chloral, but equal to them in power. This wish is at last realized in the discovery of the new hypnotics, paraldehyde, hydrate of amyl, and sulphonal.

Paraldehyde is an excellent hypnotic, apparently as safe as the bromides, free from deleterious effects, though rather uncertain in its action; and only objectionable on account of its unpleasant odor, which is imparted to the breath. My own experience has convinced me that it is a valuable substitute for opium. As an illustration of its usefulness, the following case is selected: because in the last stage of a distressing disease, it produced sleep after opium had been used without success.

CASE IV.—Mr. D., aged seventy-five, was attacked in May, 1888, with urgent cardiac symptoms, and was found to have chronic Bright's disease. He was seen by me from time to time in consultation. In the following August his condition had become very distressing; both lungs were congested at the base, there was effusion in both pleuræ, and the dyspnea was very urgent. He could not lie down, and sleep was almost impossible. All sorts of anodynes were tried without effect; even morphia became useless. On August 22d, he was given paraldehyde in doses of half a drachm every four hours, sometimes increased to one drachm, and sometimes at intervals of two hours, according to circumstances. The effect was delightful: sleep was induced in from ten to fifteen minutes. He was able to lie down, and while

asleep the breathing became much quieter. He would wake refreshed. The heart was not weakened, but, on the contrary, was temporarily strengthened. He died on the 7th of September; but the last sixteen days of his life were rendered quite comfortable by the paraldehyde. The agony of dyspnoea which he had previously suffered gave place to tranquil sleep, with diminished suffering during the waking intervals.

Hydrate of amyl is generally preferable to paraldehyde, being more reliable as well as more agreeable. It is found efficient in extreme cases of insomnia, including those due to the opium-habit. It is also available when a weak heart forbids the use of chloral.

Sulphonal is at present far more extensively employed than either paraldehyde or hydrate of amyl. Its agreeable effects and freedom from taste have already won for it an extraordinary popularity. It is applicable in all forms of insomnia, in insanity, and in the opium-habit. It is nearly free from danger, and induces no habit. It is not, however, free from objections. These have been found by Dr. Griffith¹ to be the following:

1. Slowness of action.
2. Effect prolonged into the following day.
3. Uncertainty of dose.
4. Unpleasant after-effects; which are, mental excitement, nausea, vomiting, dizziness, headache, languor, exhaustion, depression, and a staggering gait.
5. Frequent failure to produce sleep.

This author, while favorably impressed with sulphonal, expresses a decided preference for paraldehyde and hydrate of amyl; especially the latter.

My own experience with sulphonal has been very favorable. No unpleasant effects have been observed, except an occasional languor or drowsiness the following morning. I have also observed an uncertainty in its action; the same patient getting a retarded or imperfect effect on one occasion, and again a very powerful effect from a less dose. I have usually given ten to fifteen grains as an initial dose, and have rarely exceeded twenty, which amount appears quite safe and is ordinarily sufficient.

¹ Remarks on the Unpleasant Effects of Sulphonal. *Therap. Gaz*, May 15, 1889.

CHRONIC DIARRHŒA.

In chronic, as in acute diarrhœa, it is probable that no remedy has been used more largely than opium. The effects of this mode of treatment, however, are far from satisfactory. Among the veterans of the war, a very large number are still suffering from this disease. From official sources¹ I have learned that there were on September 6, 1889, 63,523 pensioners on the rolls whose disability consists entirely of chronic diarrhœa; and this does not include cases in which pension is allowed for chronic diarrhœa and other disabilities. About one-eighth, therefore, of all the pensioners are disabled by this cause alone. That so great a number of cases remain uncured at this date, more than twenty-four years after the close of the war during which most of these cases originated, is sufficient evidence that their treatment, whatever it has been, has not been attended with success. These men are ill-nourished and feeble; their diet is necessarily limited to a few articles of food, and exhausting attacks of diarrhœa are brought on by any trifling error of diet or change of temperature. These attacks often induce dysenteric symptoms. A small proportion only of these cases are probably at present under active treatment. Many rely upon some special remedy for temporary relief; some have discarded all medicine and try to keep the disease in check by diet alone. As might be expected, some have become opium-eaters,² though no such cases have come under my notice. Until recently, it has been my own custom to prescribe opium to some extent in such cases, though in very small doses; but during the past year I have treated these cases antiseptically with far better results. The remedy chiefly used, in my cases, is the sodium salicylate, in five- to ten-grain doses, three or four times a day. Though the number of cases has not been large, the results have been so far very satisfactory. In almost all of the cases the diarrhœa has been checked in two or three days, and the benefit has been more lasting than that following any other treatment. The digestion has improved, a greater variety of food can now be taken, and the various nervous symptoms which are apt to accom-

¹ Letter from the Commissioner of Pensions to Senator Dawes, to whom I am indebted for this information.

² Ira Russell, M.D.: Opium Inebriety. *Quarterly Review of Narcotic Inebriety* January, 1888.

pany this disease have been greatly relieved. Besides the soldiers, several of my cases have been ladies. In two of these depression of spirits has been a prominent symptom, and the relief to this has been quite remarkable.

Salol has also been used by me with success in chronic diarrhœa.

Naphthalin, which is highly recommended for the treatment of chronic diarrhœa by Henry,¹ Wilcox,² Peabody,³ and others, I have not yet tried.

The antiseptic method, which has been extensively and successfully used in the acute forms of diarrhœa, promises to become equally serviceable in the chronic form. Being entirely safe it may be used experimentally, without hesitation, and the effects thus far render it highly probable that it will prove of great benefit to a large proportion of the many thousands of war veterans who still suffer with this disease.

All of the antiseptic remedies which have proved valuable in chronic diarrhœa may properly be classed among the substitutes for opium.

The two following cases of chronic diarrhœa are appended as illustrations; one of them being an old soldier, and the other a lady.

CASE V.—J. C., aged fifty-four, contracted diarrhœa in the army, and has suffered from it ever since the war. His stools are usually watery; when diarrhœa is relieved the bowels become constipated. He has to be very careful about eating; has grown very thin and weak; has much headache and dizziness; has been treated by myself at times for twenty years, and also by other physicians, with only temporary relief. On February 21, 1889, he came to see me with an unusually severe attack of watery diarrhœa, which had brought on dysenteric symptoms. He had from four to seven stools daily, containing mucus and blood. He had also much pain in the bowels, hips, and legs, with headache. I ordered the sodium salicylate, ten grains four times a day in solution with glycerine and water. He came to see me eight days later, and reported that the symptoms were greatly relieved on the second day. Since then there had been one or two dejections daily, thin, but without blood or mucus; all of the pains had ceased, including the headache. The appetite was improved. He says he has never had any medicine since leaving the army which has affected him as favorably as this. He called again June 15th; he had then had two attacks of watery diarrhœa since March 1st without mucus or blood. Each time he resumed the use of the sodium salicylate and was relieved entirely in three or four days. He

¹ Antiseptic Medication. Transactions Association of American Physicians, vol. iii., 1888.

² St. Louis Medical and Surgical Journal, March, 1887.

³ Boston Medical and Surgical Journal, Feb. 24, 1887.

now has two or three dejections daily which are unformed but not watery. His general condition is much improved.

CASE VI.—Mrs. G., widow, aged forty-five: was first seen by me in August, 1884. She had then suffered for some years with chronic diarrhoea, for which she had been treated without benefit. I gave her pills of nitrate of silver one-sixth of a grain, and opium three-quarters of a grain, three times a day, which checked the bowels for the time being. She was not cured, however, for the least error of diet brought on a return of the diarrhoea, and the movements were always watery. Her diet was restricted of necessity chiefly to bread and eggs. Neither meat, vegetables, nor milk could be digested. There were constant dyspeptic symptoms, emaciation, and great depression of spirits. Whenever diarrhoea returned severely she resorted to the pills, whose proportions were several times changed to find the minimum effective dose of opium, which proved to be one-quarter grain combined with one-quarter grain of the nitrate of silver.

In August, 1888, I gave her the sodium salicylate, five grains in capsule, three times a day after meals. One week later she reported that she had one stool daily of more consistent character than for years. There was much flatulence, however, and the experiment was tried of adding iodoform one-half grain to each capsule. On September 27th, she reported that she was improving, but had occasional slight returns of diarrhoea, and the digestion was not very good. The sodium salicylate alone was thereafter given as at first. I did not see her again until January 28th, when she informed me that she had had no diarrhoea since September 27th. The digestion was better, though still not perfect; she could eat many articles of food which she had not been able to touch for years; she had gained much flesh and strength, and, above all, the depression was gone, and she was in the best of spirits. She had then taken the sodium salicylate continuously for five months. She said she thought, from the exhilarating effects, that it must be a stimulant. Since then her health has been excellent, and there has been no return of the diarrhoea. She has taken no opium nor any other medicine since January.

In bringing this paper to a close, let me say, by way of recapitulation, that we now have remedies at command which may be used instead of opium in many, if not all, of the chronic affections in which this remedy was formerly our main dependence. For producing sleep and for the treatment of chronic diarrhoea, we have at present certain hypnotics and antiseptics which are not only as efficient but so much more satisfactory that we may practically lay opium aside to be used only on rare occasions. As an analgesic opium still stands at the head of the list for promptness and certainty: but the antipyretics which have been mentioned in this paper are capable of replacing it in probably the majority of chronic cases: and the relief which these agents

afford is attended with less disturbance of the system than that which is induced by opium. In rheumatism opiates have been very largely superseded by the salicylates.

In my own practice opium has become a much less important element than it was a few years ago; and this change is attended with great satisfaction to myself, partly because, with other remedies, better results are obtained; and partly because the danger of helping to form the opium-habit is thereby much lessened. Slight as this dreaded danger may be when opiates are prescribed with caution, yet the danger is amply sufficient to cause us to rejoice in the recent valuable additions to the list of remedies which have come to be recognized as substitutes for opium.

